

**Commonwealth of Kentucky**  
**Division for Air Quality**  
***PERMIT STATEMENT OF BASIS***

Conditional Major Draft Permit No. F-02-004

FOSROC INC.

GEORGETOWN, KY

MARCH 15, 2002

DOROTHY NGUYEN, REVIEWER

Plant I.D. # 21-209-00017

Application Log # 54321

**SOURCE DESCRIPTION:**

Fosroc Incorporation manufactures chemical grouts. The Fosroc's Georgetown, Kentucky facility has three distinct manufacturing processes: Polyester Resin Cartridge Production, Cement Grout Production (including Liquid Mix Production) and Air Sealant Production. During the time lapse between delivery and processing, the material will be stored in one or more of Silos, and storage tank (Polyester Resin Storage Tank).

Polyester Resin Cartridge Production process with raw material are transfer into the mastic and/or paste mixers as appropriate and mixed to form either mastic or paste. Then the mastic and paste are then transfer into the hoppers which is then pumped into the cartridge production unit (ILU) which extrudes the mastic and paste into a plastic film tube. The filled tubes are then clipped and cut to the desired length.

Cement Grout Production (including Liquid Mix Production): For powder mix production, raw materials are transfer into the powder blending mixers as appropriate and mixed to yield cementitious grouts which are then packaged in bags. For liquid mix production, all raw materials are transferred into the liquid mixer as appropriate and mixed to yield polyester resin mastic which is packaged in cans.

Air Sealant Production: All raw materials are transferred into the air sealant mixers as appropriate and mixed to produce air sealant which is then packaged in pails.

**COMMENTS :**

**Emission factors and their source:**

EP01: Polyester Resin Cartridge Production contains:

4 mastic mixers EP01(1→4) and 3 catalyst paste mixer EP01(5,8,9), with dust collector EP01(6).

Emissions due to the Polyester Resin Cartridge Production were calculated based on the source stack test information. This process produces VOC emissions and some non-VOC emissions. These VOC and non-VOC emissions are derived from supplier stack tests, and mass balance calculations. The emission of styrene is based on the maximum concentration of these residual monomers in the polymer. It is assumed that all residual monomers are emitted during the process. The emission factor for particulate emissions due to mixing is based on the Engineering Estimate. The particulate is controlled by the dust collector EP01(6).

EP02: Cement Grout Production contains: 3 Powder mixers, 1 liquid mixer, and weight out station

Control equipment: Dust collector MP(10) with efficiency of 99.8 %

The VOC and styrene emissions were established in the same manner as for the Polyester Resin Cartridge Production. The emission factor for particulate emissions due to mixing is based on the Engineering Estimate. The particulate is controlled by the dust collector EP02(10).

EP03: Limestone Bulk Handling System The source submitted the application to construct the addition of limestone bulk handling system with 7 Modular Cartridge Vent Filters attached. There will be 2 limestone bulk handling system totally.

The emission factor for particulate due to this process is based on the Engineering Estimate. The particulate in this process is controlled by the dust collector EP03(11).

EP13: Air Sealant Production contains two (2) Paddle Mixers.

The emission factor for particulate due to this process is based on the Engineering Estimate. The particulate in this process is controlled by the dust collector EP13(21).

EP14: Slag Bulk handling System: (2500 ft<sup>3</sup> Silo with 400-500 CFM Dust Collector)

The emission factor for particulate due to this process is based on the Engineering Estimate.

EP15(15): Polyester Storage Tank. The styrene emission is calculated by using TANK 4.0 program.

EP16: Conveying System: is used to transfer finished cement grout products into bulk tank trucks.

The emission factor for particulate due to this process is based on the Engineering Estimate.

The source is applying for construction a new limestone bulk handling system (2,000 ft<sup>3</sup> Silo with 1,176 Modular Cartridge Vent Filters).

The source also has done some changes in the facility. EP 01(25b), Ross/Walsh HDM 75 planetary mixer, EP04(15), 05(16), 06(17), 07(18), 08(19), and 09(20), storage bins (silos) have been removed. EP12(23), 1,300 gallon steel mixing tank with a turbine blade, is no longer used and should be delisted. EP11(22), Marion200ft<sup>3</sup> is now renamed to EP02(22). Assigned emission point number to Drum-Filling Station (drum hood) for Powder Raw Materials in Polyester Resin Cartridge Production Process, Munson 700-75 75 ft<sup>3</sup> Rotary Mixer with self-contained 1,243 CFM Dust Collector for Cement Grout Production, and Hapman 500 Series Bulk Powder Conveying System for Transferring Finished Cement Grout Production.

**Applicable regulations:**

401 KAR 59:010, New Process Operations, applies to the particulate matter emissions from units constructed on or after July 2, 1975.

**Sourcewide Emission Limitations:**

The emission of any individual Hazardous Air Pollutant (HAP) shall not exceed nine (9) tons during any consecutive twelve (12) month period.

**Compliance demonstration:**

Sourcewide Emission Limitations: Compliance with the HAP emission (styrene) limits are demonstrated by limiting the operating hours. The styrene emission rate is supplied by the source, which is derived from the source stack test, laboratory data, and mass balance.

The source shall record hours of operation and submitted to the Division upon request.

**EMISSION AND OPERATING CAPS DESCRIPTION:**

Fosroc's Georgetown, Kentucky has requested that a conditional major permit be issued with federally enforceable conditions to limit emissions of styrene to less than nine (9) tons per year. This permit requires the source to reduce the production by limiting the operating hours. These requirements will reduce the potential to emit (PTE) HAP (styrene) to 6.9 tons per year.

**PERIODIC MONITORING:**

EPO1: Polyester Resin Cartridge Production: The permittee shall monitor the weight percent and the monthly usage of the Unsaturated Polyester Resin. The permittee shall record the monthly usage of Styrene Monomer. The inlet of the raw material mixture and operating hour shall be record for controlling emission.

EP02: Cement Grout Production: The permittee shall monitor the weight percent and the monthly usage of the Unsaturated Polyester Resin. The permittee shall record the monthly usage of Styrene Monomer. The inlet of the raw material mixture and operating hour shall be record for controlling emission.

**CREDIBLE EVIDENCE:**

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.